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Superfund

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Site:	Maline Creek
ID #:	MOE980631162
Break:	2.4
Other:	2-9-94

February 9, 1994

Environmental Health Scientist
Agency for Toxic Substances and Disease Registry, Region VII

Health Consultation: Certain-Teed Maline Creek Site
St. Louis, Missouri. (7-06)

Denise Jordan-Izaguirre, Senior Regional Representative
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Through: Director, DHAC, ATSDR (E-32) _____
Chief, ERCB, DHAC (E-57) _____
ERCB Consulting Scientist (E-57) _____

BACKGROUND AND STATEMENT OF ISSUES

Region VII EPA has requested ATSDR to review the available data to make a determination on the health threat posed, and the immediacy of cleanup activities for this site [1].

The Certain-Teed Maline Creek site is comprised of a 7 acre landfill and three unoccupied buildings located at 600 St. Cyr Road in the Bellefontaine section of St. Louis, Missouri. Cement asbestos water pipe and asbestos sheeting were previously manufactured there. The site is bordered by railroad tracks, Riverview Boulevard, St. Cyr Road and Maline Creek. The site is only partially chain-link fenced so access to the site is unrestricted. The western boundary of the site is Maline Creek which empties into the Mississippi River approximately 0.5 mile to the east. The immediate vicinity of this site is mixed industrial/residential. The nearest occupied residential area is approximately 150 feet across the creek. The exact population is not known, but the area is well developed with fully occupied, single free standing dwellings. Down the creek are other occupied residential and commercial areas.

In 1979, asbestos scraps, the production wastes from the manufacture of asbestos containing materials (ACM) were interred in a huge mound (approximately 1 acre) under an EPA closure plan approved by the Missouri Department of Natural Resources (MDNR). The area has been described as a landfill, but is not a depression filled with material and then backfilled as one would describe a conventional landfill, but is a large above ground earth covered mound. In May 1982, Missouri Sewer District (MSD) employees noticed broken pipe and other asbestos debris and

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removed several dumptruck loads of this waste to a local sanitary landfill for disposal [2]. It is not known if this landfill was legally authorized to accept ACM waste.

In May and June 1988, EPA Region VII Air monitoring personnel performed site inspections and noticed ACM scrap exposed along the creek bank and in the water. In the Spring of 1992, a local congressional representative's inquiry into the site in response to a concerned citizen's complaint, reinitiated federal activity [2]. In October 1992, bulk samples of the ACM scrap were submitted for laboratory analysis. This material was identified as containing chrysotile and crocidolite asbestos fibers [3]. Chrysotile (white asbestos) was reported at 8 - 15 percent and crocidolite (blue asbestos) was reported at 4 - 5 percent [4].

In June 1993, a site visit was conducted by EPA and ATSDR regional personnel. This recent visit discovered more extensive damage to the integrity of the landfill than was evident in earlier site visits. Erosive damage to the portion of the landfill near the creek is an ongoing problem and continues to expose more ACM to the environment. Presumably, asbestos fibers are being washed downstream. The rest of the huge mound was secure, being grass and brush covered.

During the most recent site visit, it was evident that erosive damage by the creek water and precipitation had, and was continuing to damage the integrity of the landfill. It was evident that the creek had cut into the landfill, thus exposing considerable quantities of interred ACM. There was a ledge projecting 6 to 8 feet from the creek bank where the water had eroded the earth beneath it. This situation also poses a physical hazard in the form of falling on top of someone walking on the creek bank below, or to children playing on it. This ledge was composed primarily of pieces of asbestos pipe and other previously discarded ACM remnants and scrap. The ACM had been exposed to the elements and the alternating thawing and freezing along with wetting and dessication had deteriorated the ACM, thus rendering it friable. This in turn avails it to windborne transport, potentially to the adjacent residential neighborhood.

Recently, the flood waters have reportedly reached into some of the yards of the residential area. It is not known if the ACM has migrated via water transport to downstream inhabited areas. During the June 1993 site visit, there was evidence of children frequenting the area in the form of abandoned toys and small shoeprints in the footpaths. This creek is not used for potable purposes or for recreational fishing in the vicinity of the site.

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DISCUSSION

The health hazards associated with asbestos are asbestosis and cancer. Asbestosis is a condition where the asbestiform fibers become lodged in pulmonary tissue, eventually leading to scarring and a loss of respiratory ability. This usually results from occupational exposures to massive quantities over extended periods of time, and is not usually of concern to persons exposed to small quantities of asbestos. Changes in the membrane surrounding the lung are sometimes found in people living in areas with high environmental levels of asbestos, but effects on breathing are not usually serious [5].

The other health threat - cancer, appears to be a more plausible outcome to intermittent exposure which this site could pose. The National Toxicology Program, the International Agency for Research on Cancer (IARC) and the USEPA have designated asbestos as a known human carcinogen [5]. There are two types of cancer associated with asbestos exposure - lung cancer, and mesothelioma (cancer of the thin lining around the lung) [5]. The levels of asbestos in air that lead to lung disease depend upon a number of factors including: (1) the exposure duration, (2) time interval between first exposure to the present time, and (3) smoking cigarettes, which has been shown to have a synergistic effect on lung cancer when associated with asbestos exposure. Fiber size has been implicated in asbestos cancers, with the long fibers ($> 1/5000$ inch) are more likely to cause additional cancers than short fibers ($< 1/10,000$ inch). Asbestos has a prolonged cancer-causing latency period of between 10 and 40 years subsequent to first exposure [5].

The deteriorated condition of the ACM and the close proximity of an occupied residential area indicate that a removal action at this site is recommended. Although laboratory analysis and health outcome data are lacking, there is a real possibility of a completed exposure pathway between this site and the nearby residents, downstream residents, and trespassers. Corrective actions are imperative to remove this potential health threat from the local community. Site conditions are continuing to deteriorate and the level of health threat to the local populace is increasing proportionally. If complete remediation of this site is not conducted, then a limited removal action, or more correctly a temporary reburial of the disinterred ACM should be performed.

CONCLUSIONS

1. The integrity of the landfill has been compromised, and erosion is continuing, thus worsening the situation. Access to the contaminated area is not restricted.

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2. Off-site migration of asbestos may have occurred in the past, and may be currently occurring. As access to the the contaminated area is not restricted, this site poses a continued health threat to trespassers.
3. In addition to the long term asbestos hazard posed by this site, there are very real physical hazards associated with this site.
4. The extent of offsite contamination has not been determined.

RECOMMENDATIONS

1. Restrict public access to the site.
2. Prevent off-site migration of asbestos.
3. Conduct off-site sampling.

Jerome F. Joyce, Ph.D.

REFERENCES

1. Correspondance from Donald Hamera (FIRE/EP&R/ENSV) to Denise Jordan-Izaquirre (ATSDR ORO Region VII). Subject: Health Consultation for the Certain-Teed - Maline Creek Asbestos Site, St. Louis, Missouri. August 6, 1993.
2. Memorandum from Joseph M. Parish (E&E TAT) to Paul Doherty (EPA/DPO). Subject: Site Assessment: Certain-Teed Transite Pipe. April 17, 1992.
3. Memorandum from Joseph M. Parish (E&E TAT) to Paul Doherty (EPA/DPO). Subject: Conclusions: Certain-Teed Transite Pipe. May 8, 1992.
4. Memorandum from Paul E. Beatty (AMON/EMCM/ENSV) to Ronald D. McCutcheon (EP&R/ENSV). Subject: Maline Creek/Certain-Teed, St. Louis, Missouri, Transite Pipe and Debris Sampling, 10/29/92. November 8, 1992.
5. Agency for Toxic Substances and Disease Registry. Toxicological profile for asbestos. Atlanta: US Department of Health and Human Services, Public Health Service, 1990.